

Schools 4.0 - Innovation in Vocational Education

The project Schools 4.0 aims at changing the national and European policies in Education and in all VET schools throughout Europe with a proven pedagogical tool. On the other hand, it intends to build a framework for rethinking pedagogical practices and identifying the changes to be made to move from a 19th-century school to a 21st-century school.

Since the first issue of the Schools 4.0 Newsletter, a lot of work has been carried out by project partners! Most of the work is related to the Intellectual output of the project and even though might be less visible than other activities, it has become clear from the meetings and trainings throughout the year of 2019 that the partnership is working hard and achieving amazing results.

A Pedagogical Innovation Framework for Vocational Education for the 21st Century

In order to develop the "Pedagogical Innovation Framework", partners will follow a collaborative action research. The approach is based on a positive change, appreciative inquiry characterised by 5-step cycle: DEFINE, DISCOVERY, DREAM, DESIGN, DELIVER/DESTINITY.

Since the last edition, we would like to share the highlights of what was done:



The project named **"Schools 4.0 - Innovation in Vocational Education"**, was born from a set of 5 vocational schools belonging to the Network of Schools with Vocational Education guided by researchers from the department of CEDH - Center for Human Development Studies that, informally, organised reflection meetings on the paradigm shifts that must exist in vocational education in order to prepare young people to meet the challenges of the 21st century and whose items are outlined in the 2020 Strategy.

These Reflection Works have given rise to concerns and proposals aiming solutions that should be tested and which were shared with some international partners (the case of Denmark and Greece), and it was concluded that there was a need to draw up a verifiable document, above all transferable, and that most vocational schools in Europe could adopt with a success guarantee concerning the change.

It is expected that a framework will be created to rethink pedagogical practices and identify the changes to be introduced in order to move from a nineteenth-century school to the twenty-first century "School 4.0" capable of responding to the current challenges of Vocational Education at European level.

1

DEFINE
WHAT'S THE FOCUS OF
INQUIRY?

2

DISCOVERY
WHAT GIVES LIFE?

3

DEFINE THE INNOVATIVE
FRAMEWORK OF WHAT A
SCHOOL 4.0 SHOULD BE

4

DRAW A PLAN TO CHANGE
YOUR SCHOOL

5

IMPLEMENT & EVALUATE
CHANGES IN SPECIFIC
CONTEXT

Meeting on the SIVE 4.0 (Argostoli, 16 March 2019)



On 16 March 2019, DIAVIMA initiated an informative meeting on the SIVE 4.0 program. The meeting was held in Kefalonia (Argostoli) and involved 39 people from NGOs, parents' associations and Vocational Education teachers (Directorate of Secondary Education).

The purpose of the meeting was to inform local actors of the SIVE 4.0 program and also to raise awareness among all the participants who were interested in the program.

In the beginning there was a presentation of the program leader, as well as all other organisations, which took part in the program. Important information was provided about the philosophy of the program, starting

from the Industrial Revolution 1.0 to Industrial Revolution 4.0 and the relevance between Industrialization and Education, with emphasis on Education 4.0 and the development of skills and competencies. Following that, the purpose and objectives of the program, its duration and key planned actions were presented.

All meeting participants expressed great interest in the program. They mentioned that they found it innovative and that its philosophy and goals were particularly appealing to them, this is why they would definitely be interested to get involved further.



2nd Transnational Meeting in Vila Verde, Portugal in May 2019

The meeting was hosted by project partner Escola Profissional Amar Terra Verde – EPATV. The partners had the opportunity to visit EPATV installations and to discuss with the students and teachers participating in different courses available at the school, such as Metal Mechanics, Electricity and Tourism. They all highlighted the possibility of developing professional practice as a very positive factor. The school also has a department focused on Adult Education.

The expected outcomes of the project - a book, an E-Book, and a collection of best practices - have been introduced by Professor Luisa Orvalho (Universidade Católica Portuguesa) and aim at creating a tool for making VET fit for the future.

On the afternoon of 21st of May the seminar 'Schools 4.0 - Today's School preparing for the Challenges of Tomorrow' took place, where the partners shared their perspectives

and reflected on the new approaches to classroom work and training. Teachers from EPATV introduced the digital tools they use in the classroom. In this respect, the use of educative apps in a balanced way means more resources to approach learning.

EPRM, Escola Profissional de Rio Maior, presented examples of good practices in practical training based on students' testimonials. It is necessary to build a new way of teaching specific kinds of students. Allowing people to choose the most adequate tools leads to more successful teaching. EfVET members INSIGNARE, centred their presentation on digital tools for formative assessment and self-regulation of students. 21st-century students are different, so different skills are required. We need critical and creative thinking, better communication and collaboration in order to

adapt and better prepare students for future jobs.

The meeting ended with a guided tour of Porto with an itinerary built by the students of the courses of Tourism and Management of Events of the Professional School Raul Doria.



Short-term joint staff training in Køge, Denmark in November 2019

From the 4th – 7th of November, partners of the Schools 4.0 Project attended a Training Seminar in Køge, Denmark, with the main purpose of learning from the Danish experience regarding digitalization and to have a greater understanding of how Schools 4.0 work in Denmark.

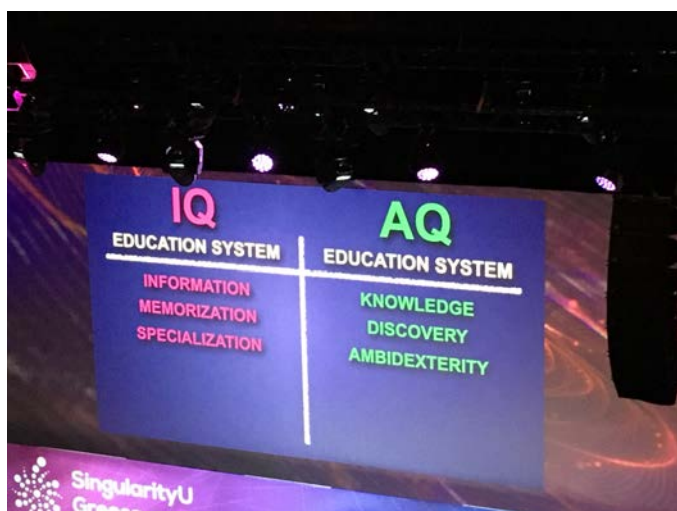


The training focused on topics such as: the Danish education and labor system; Micro Learning and Teaching strategies; Flipped Learning; Digitalized Language Learning; Working with Refugees; Role of the trainer in a digitalized school, and a presentation on the Future in Denmark regarding schools 4.0 in the VET system. It was a fantastic opportunity for Teachers to share and learn from others and a great opportunity to discuss about the impact changes Industry 4.0 is bringing to

Teachers and the teaching and learning process.

During the training it was also possible to understand in greater detail how will the e-book look like and to discuss and agree on the structure of the case studies. It was also very interesting to have an initial “taste” of some of the case studies already collected - it did increase the enthusiasm and motivation of partners to further contribute to the project!

Participation to the SingularityU Greece Summit 2019



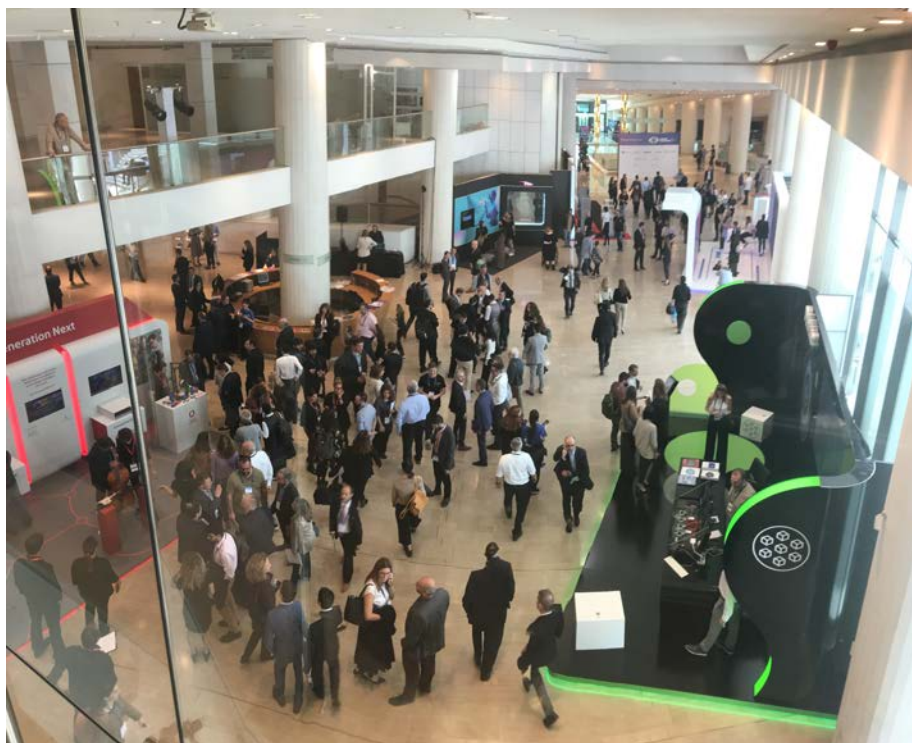
Singularity University is a platform for promoting new ways of thinking, and for innovating a launch pad for emerging ventures, and a powerful global community of doers and leaders, all poised to solve humanity's biggest problems. Singularity University refers to a global community using exponential technologies to tackle the world's biggest challenges empowering individuals and organisations with the mindset, skillset, and network to build breakthrough solutions that leverage emerging technologies like artificial intelligence, robotics, and digital biology.

DIAVIMA team member Katerina Aravantinou Fatorou participated in that summit, which took place in 11 and 12 of November 2019 in

Athens, being awarded by the venue with an Impact Ticket.

During the DEEP DIVE sessions, Katerina discussed with professors from the Silicon Valley about the future of education referring to the ERASMUS+ project “Schools 4.0 - Innovation in VET (SIVE 4.0)”, how robots can co-exist with humans and vice versa, the importance of the term edutainment (education and entertainment) as a creative means to transform information into knowledge and familiarise humans with robots, education reform focusing on knowledge, discovery, ambidexterity, unlearning, experimentation and “future of work”, sharing ideas, thoughts, fears, and perspectives.





Picture from SingularityU Greece Summit 2019

Participation in the 5th Hellenic Conference of Biology in Education



Between 29/11 and 01/12 2019, it took place the 5th Hellenic Conference of Biology in Education. The purpose of this conference is to bring together researchers, public and private education teachers, undergraduate and postgraduate students and biology and pedagogy students, as well as people who formulate educational policy to discuss issues related to Biology in Education in order to present, discuss, and share researcher's work so that research results are useful in

educational practice to improve learning outcomes in Biology teaching.

The conference also aimed to highlight the real situation in the modern school classroom, to propose ideas for improvement and more effective teaching of Biology, while demonstrating teaching practices, results of teaching experience and application in real-world learning environments, to set good examples for applications by other teachers or starting points for new approaches. But also, to share and disseminate to the general public aspects and pioneering and innovative ideas relevant to Biology in Education, that will improve the learning outcome and enhance the presence of Biology in Education. Katerina Aravantinou-Fatorou, on behalf of DIAVIMA, participated to that conference with a presentation titled "The contribution of Neurobiology to education during the Fourth Industrial Revolution". The lecture aimed to analyse the advances of the 4th Industrial Revolution, how those impact Education and how educators are concerned.

During the lecture, it had been a dialogue with Professors from secondary education on how they observe our education system, our schools, their thoughts on Education 4.0 and the changes should be made in order the Education System to follow the recent developments. The innovations and suggestions of ERASMUS+ project “School 4.0 – Innovation in VET (SIVE 4.0)”,

EPATV at the Erasmus+ International Meeting in Denmark



The 3rd international meeting of the Erasmus+ project “Schools 4.0 - Innovation in Vocational Education” took place between the 4th and 8th of November in Denmark.

This project is coordinated by EPATV, developed by 3 more Portuguese schools, Insignare, Escola Profissional Raul Dória, Vocational School of Rio Maior and 3 European entities, Kentro Dia Viou Mathisis “Diavima” - Greece; Køge Business College - Denmark, and EFVET as a European body responsible for dissemination.

A firm push into the digital era

How all Europe's teachers all of a sudden are dealing with new working conditions in a very difficult time. From one day till the other, a large group of teachers are producing digital learning for many students every day. The good news is that they are doing quite well.

When KBC became a partner in Schools 4.0 little did we know how relevant the topic

The project aims at building an Intellectual Output (IO): Pedagogical Innovation Reference for Professional Education for the 21st century. IO intends to reflect on what a School 4.0 should be, assuming from the outset that technological innovation is undoubtedly transforming the world and that this transformation must also reach all educational establishments.

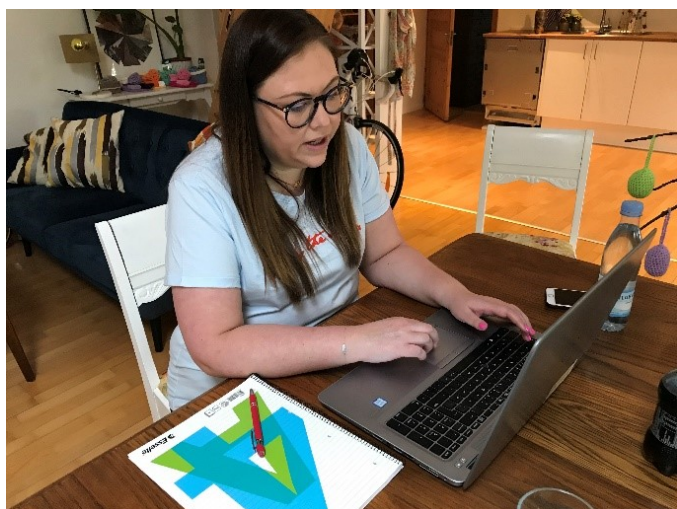
This “new school” should provide interdisciplinary knowledge with maximum use, and train future adults for the challenges of a World and an Economy that operate, in a network and on a digital basis, at a dizzying speed.

During the days of the meeting, the various guest speakers presented different themes: the type of learning of the Millennial student; ways of approaching different learning rhythms; the various digital tools that teachers have at their disposal to be implemented in the classroom. These were days of sharing good practices and great productivity. The next meeting is planned to take place in Kefalonia, Greece, dates still to be confirmed given the current situation with COVID 19.

would be for school teachers all over Europe just more than a year after we signed the first Erasmus+ documents.

In January 2020, we first became aware of the Covid-19 virus when we heard about people infected with this deadly virus in Wuhan, China. We saw pictures of cities, which were locked down and we could not in our wildest dreams imagine that we, two months later

would experience the same lockdown as we watched on television screens from China.



At Køge Business College the beginning of March was business as usual, we taught lessons in classes, occasionally using new technologies, we met with our colleagues in our staff room exchanging ideas, told stories about students or a lesson that went really good or bad, or private talks about more personal matters.

On March 12 our perfectly normal everyday life changed drastically. The Danish Prime Minister held a press conference where she told that all youth educations would be closed the next morning.

The teachers' reaction was to go to our private group on Facebook and try to grasp what the Prime Minister had actually said. All sorts of emotions were expressed and questions like what to do now, what should we tell the students and last but not least how should we teach were expressed. Confusion arose while we all anxiously waited for news from the management of our school. Later in the evening we were told that we should follow our ordinary timetable and teach the classes we usually taught, of course, just from home.

If you had not been a virtual wonder teacher before, you suddenly had a few days to get ready to find and test new platforms, get knowledge about new virtual tools while at

the same time involve didactic methods. In this process, teachers did their outmost to find the best tools and platforms and their learning curve was more steep than the curves showing people infected with Covid-19.

In the first days of virtual teaching, the platforms crashed several times as schools and educational institutions all over the country were online in the same time-slot. It was not an easy task to try to teach 30 students sitting at home, when the sound or video did not work, or the students all talked at the same time, or you could only see a few students as you cannot have 30 students in one screen etc. The teachers had humorous discussions whether we should appear online with or without make-up, combed hair, or we should just show up in our pyjamas.

The students also struggled hard the first days. They too had to install new tools that sometimes did not work. Moreover, if they had nine different teachers, and each teacher had fallen in love with a new tool, the student had to install this and dedicate time to find out how it worked and at the same time do their homework. In class they could just put up their hand and answer the questions, now they had to write long answers, upload answers to not get absence, make videos, podcasts and vodcasts which were not always easy to upload.



So, what did we learn from being pushed into the virtual era in a matter of very few days? First of all, sitting at home and teaching has become more or less “a new normal” after approximately 7 days, teachers do their teaching in many different ways, some are 100 per cent virtual, others do fifty/fifty and others survive with questions, feedback and messages. Many of the students like the variation, as they think it is too much being online and virtual from 8.20- 3 pm every day. Many students and teachers miss the proximity in the class room, the social chats and having eye contact. However, the most important lesson until now is that the students who have learning difficulties/disabilities and diagnoses have a really hard time in this new digital landscape. They have a hard time

doing their homework on their own, to get up in the morning, to write assignments etc. They are simply lost without the help from peer students, teachers and mentors and perhaps with no family members to help them. Many fall behind right from the beginning because some of them cannot get the help they need.

So, our prime goal of digitalisation of schools in our Erasmus+ strategic partnership suddenly became a lot more relevant than we initially had intended. The last three weeks has been a large virtual experiment. It will be interesting to see if digital tools and virtual teaching will be part of the teachers’ and students’ reality when we return to our schools, hopefully very soon.

Other news

As part of the project activities an initial survey was carried out by Partners of the Project with the overall purpose of answering the question “What should a 4.0 school look like?”. Even though the low lack of responses at European level, it was possible to organise the results in 3 main categories that represent what VET colleges should be working towards in the future. Needless to say that digitalization of education has come up as a top priority and Luisa Orvalho, the Consultant

of the Project referred 3 pillars related to the digitalization, that should be addressed by any School 4.0, namely:

- Information analysis and data set interpretation are key learning areas in the century’s curriculum;
- Informatics and computational programming are the basis of digitalization;
- The social and collaborative components of digitalization.

Partnership

Escola Profissional Amar Terra Verde (EPATV)

Escola Profissional Amar Terra Verde (EPATV) is a vocational school that was created in 1993 from a tripartite agreement between 3 town halls: Amares, Terras do Bouro e Vila Verde. Nowadays, it is a private institution under the supervision of the Ministry of Education.

The vocational school has around 800 students and 90 teachers and it is located in Vila Verde, a rural area in the north of Portugal, strongly low qualified and whose population struggles with social and economic problems, mainly due to unemployment, low formal qualifications, and life conditions. Included in the VET school, we have a Lifelong Learning and Adult Education Unit, especially dedicated to the Recognition, Validation and Certification of Skills since 2006 and with more than 40.000 hrs of training courses addressing adults (CVET). We also develop

intergenerational activities, thinking about the students and their families, and literacy courses.

The vocational school – EPATV – is working on mobility projects since 1993 in partnership not only with European countries, but also with some other Portuguese speaking countries: Cape Verde, St. Tome & Principe, Mozambique, Guinea Bissau and Angola. We also work with students from Guinea Equatorial, Senegal, Libya. More recently, the school has hosted students from Brazil, Ukraine, Romania and from African countries.

EPATV is a member of the European Association for the Education of Adults, the voice of non-formal adult learning in Europe and we're now involved in its vice-presidency. We're also members of APCEP – Portuguese Association for Lifelong Learning and ANESPO – National Association for Vocational Schools.

Escola Profissional de Comércio, Escritórios e Serviços do Porto - Associação Raul Dória

With 30 years of history, the Professional School Raul Dória has established itself as a reference institution in professional education, developing several projects related to traditional commerce and the city of Porto. At the moment, it has a wide

range of companies with which it collaborates in curricular internships, promotes the search for the first job for young school graduates and develops projects that not only bridge the gap between theoretical and practical teaching, but also allow trainees to articulate the knowledge and skills

Escola Profissional de Rio Maior (EPRM)

The Rio Maior Vocational School is part of the vocational education offer system regulated by the Ministry of Education and has as its main objective the educational and professional training of young people, anchored in the mission to prepare citizens with socio-professional

competences adjusted to the labor world and to the characteristics of the society which they belong to.

One of the priorities of the school's educational project is to provide students with a stimulating and motivating learning process allowing them to expand their horizons at the professional level,

but also at a personal level.

The EPRM is considered as a reference institution in professional and technological training, seeking

to provide answers to the social, cultural and economic needs of the region, and an indispensable generator of qualified human resources.

European Forum of Technical and Vocational Education and Training (EfVET)

EfVET is a unique European-wide professional association which has been created by and for providers of technical and vocational education and training (TVET) in all European countries. Its mission is to champion and enrich technical and vocational education and training through transnational co-operation by building a pan-European network of institutions.

EfVET represents directly the views of its members (187 from 31 countries) on VET issues to all the European Union Institutions and Bodies and responds to all appropriate consultation processes. EfVET offers a network of and for, professionals to foster connections between researchers, business people, and practitioners in Vocational Education and Training and lifelong learning.

INSIGNARE - Associação de Ensino e Formação

Insignare is a non-profit association, which has been working for more than 20 years in the areas of teaching and vocational training, under the supervision of the Ministry of Education.

Within the varied range of vocational courses available, Insignare provides level 4 secondary education courses with both vocational and academic qualification. Moreover, it also provides vocational training through short courses for adults, thus promoting lifelong learning.

Kentro Dia Viou Mathisis "Diavima"

The Center aims to develop actions that promote lifelong learning and sustainable development. In this context, it organises and supports a variety of educational activities both conventional and distance (eg conferences, workshops, lectures, exhibitions, workshops, training seminars, Summer Universities etc.) aimed at the education

and training of individuals and social groups and programs that contribute to the protection and sustainable management of natural and cultural heritage. He is also responsible for writing and publishing books, leaflets and educational materials in hard copy and digital form. It participates in European programs and collaborates with public and private bodies as well as with scientists from Greece and abroad.

Køge Business College

Køge Business College is a major regional educational Institution. In close collaboration with businesses and organisations, we develop educations, activities, projects etc. at all levels. We provide and distribute educations for all stages of

lifelong learning on which the welfare of the society depends. Our focus is to provide knowledge and theory that our pupils, students and course participants can use in practice. Our college enables you to get the key to the future.